WEATHER OBSERVATIONS

- **WEATHER OBSERVATION REPORTING REQUIREMENTS**
- **WEATHER OBSERVATION TOP PORTION OF THE FORM IN METAR FORMAT**
- **ENCODING WX OBSERVATION AND FILLING OUT BOTTOM PORTION OF FORM (SHIP SYNOPTIC CODE)**

TAKING/TRANSMITTING WEATHER OBSERVATIONS

- WHEN UNDERWAY AT SEA:

  ALL SHIPS AT SEA ARE REQUIRED TO TAKE REGULAR OBSERVATIONS UNLESS EXEMPTED BY COMPETENT AUTHORITY.

  WHERE SHIPS ARE STEAMING IN COMPANY OR IN CLOSE PROXIMITY (GENERALLY WITHIN 10 NAUTICAL MILES), THE OFFICER IN TACTICAL COMMAND (OTC) MAY DESIGNATE ONE OF THE SHIPS TO REPORT OBSERVATIONS FOR THE GROUP

- WHEN INPORT:

  SHIPS INPORT ARE REQUIRED TO CONTINUE REGULAR WEATHER OBSERVING AND REPORTING UNLESS THERE IS A NEARBY U.S. MANNED WEATHER REPORTING ACTIVITY WHICH MEETS EXISTING REPORTING REQUIREMENTS

- IF EXEMPTED FROM TAKING OBSERVATIONS:

  MAKE A NOTATION IN THE REMARKS SECTION OF THE METEOROLOGICAL RECORDS TRANSMITTAL FORM (CNMOC 3140/2DF), PART B. INDICATE THE AUTHORITY WHO EXEMPTED YOUR UNIT FROM TAKING OBSERVATIONS, THE DESIGNATED GUARD SHIP(S) AND EFFECTIVE DATES/TIME EXEMPTED

TAKING/TRANSMITTING WEATHER OBSERVATIONS

DURING MINIMIZE CONDITIONS:

WIND SPEEDS IN EXCESS OF 25 KNOTS
SEAS 12 FT OR GREATER
MODERATE OR HEAVY PRECIPITATION
PRESSURE CHANGE 3MB OR GREATER DURING PAST 3 HOURS
VISIBILITY <1NM.
OCEANOGRAPHIC OBSERVATIONS AS DICTATED BY CURRENT OPERATIONS.
VOLCANIC ACTIVITY PRODUCING VOLCANIC ASH.

REPORTING 3 HOURLY SYNOPTIC OBS:

TRANSMIT IMMEDIATE PRECEDENCE
WINDS 34 KTS OR GREATER.
SEAS 12 FT OR GREATER.
WITHIN 300 NM OF TCFA (TROPICAL CYCLONE FORMATION ALERT).
WHEN WITHIN 500 NM OF TROPICAL DEPRESSION, TROPICAL STORM, OR HURRICANE.

ACCURATE OBSERVATIONS, PROPER ENCODING AND TIMELY TRANSMISSION OF THIS DATA IS ESSENTIAL!

TAKING/TRANSMITTING WEATHER OBSERVATIONS

WHO USES THIS DATA:

1. **PRIMARY USER: FLEET NUMERICAL, METEOROLOGY & OCEANOGRAPHY CENTERS PEARL HARBOR & GUAM, NAVPACMETOCFAC DIEGO**
2. **BATTLEGROUP ASSETS:**
   - **EMBARKED OA DIVISIONS**
   - **MOBILE ENVIRONMENTAL TEAM FORECAST**

HOW DOES THIS DATA EFFECT THE FI

SYNOPTIC DATA IS REVIEWED UPON RECEIPT AND USED FOR THE FOLLOWING:

1. **INPUT INTO COMPUTER FORECASTING MO**
2. **ACCURATELY FORECASTING HIGH WINDS/SE**
3. **DETERMINING OTSR DIVERTS TO ENSURE SI SAFETY**

SHIP INFORMATION TOP COLUMN (HORIZONTAL)

- **DAY (UTC):**
  - ENTER THE DATE. THE DATE CHANGES AT **0001Z** WITH THE START OF A NEW FORM.
- **MONTH/YEAR :**
  - ENTER THE MONTH IN 3 LETTERS AND THE YEAR IN 4 DIGITS.
    (APR, MAY, FEB, ETC..., YEAR 1996, 1997,ETC...)
- **SHIPS CALL SIGN:**
  - ENTER THE SHIPS 4 LETTER IDENTIFIER
    (NJAM, NJPT, NGPU, NHPO, NHUN, ETC...)
- **SHIPS TYPE, NAME & HULL NUMBER:**
  - CHECK USS, USNS OR OTHER
  - ENTER SHIPS FULL NAME & HULL NUMBER.
- **RATE OF OBSERVER:**
  - **CHECK THE QUARTERMASTER BOX.**

SFC WX OBS	DAY (UTC)	MONTH	YEAR	CALL SIGN	(USS) (USNS)	QM AG

(COL 1 TYPICAL ERROR)

CNMOC 3141/3 (REV. 1-96) (0108-LF-019-3000)

SURFACE WEATHER OBSERVATIONS
PART 1 (SHIPBOARD)
(METAR/SPECI) METAR

TYPE METAR SPECI (1)	DATE & TIME [ ] UTC [ ] LST (2)	WIND DIRECTION (true) (3)	WIND SPEED (knots) (4)	WIND GUST (knots) (5)	WIND VARIABILITY (true) (6)	VISIBILITY (7)	PRESENT WEATHER (8)
ME	0355	00	10			10	
ME	0455	33	14			10	
ME	0255	35	11			10	SKC
ME	0355	34	12			10	SKC
ME	0455	34	9			10	SKC
ME	0555	35	10			10	SKC
ME						10	SKC
ME						10	SKC
ME						10	SKC
ME						10	SKC
ME						10	SKC
ME						2	FOG
ME						5	FOG
ME	155					6	FOG
ME	145					8	
ME	1555	00	10			3	FOG
ME	1655	31	12			5	
ME	1755	30	10			7	FOG
ME	1855	32	10			1	FOG
ME	1955	32	10			3	FOG
ME	2055	31	10			2	FOG
ME	2155	31	10			.26	FOG
ME	2255	31	11			.25	FOG

Visibility and/or sky condition meet special criteria. These changes all took place exactly on the hour?

THE VERTICAL COLUMNS (COLS 1 & 2)

- **TYPE OF REPORT: (COL 1)**
- **ME (METAR):** STANDARD HOURLY OBSERVATION
- **SP (SPECIAL):** TAKEN WHEN SIGNIFICANT WEATHER EVENTS OCCUR, AIR CRAFT MISHAPS, MAN OVERBOARD, OR AS DICTATED BY THE CRITERIA TABLE (II-2-1).

- **DATE AND TIME COLUMN 2:**

1. DO NOT RECORD THE DATE
2. RECORD THE TIME IN UTC ONLY
   MUST BE **WITHIN 5 MINUTES OF THE HOUR (0155, 0357, 0959, ETC...).**

TYPE METAR	DATE & TIME	WIND				VISIBILITY
		DIRECTION	SPEED	GUST	VARIABILITY	
SPECI	(X) UTC ( ) LST	(true)	(knots)	(knots)	(true)	(Visibility)
1	2	3	4	5	6	7
ME	1156					
ME	1256					

WIND DIRECTION (COL 3)

- **NOTE:** OBSERVE WIND DIRECTION/SPEED AVERAGE FOR PAST **2 MINUTES**.
- OBSERVE VARIATIONS IN DIRECTION AND FLUCTUATIONS IN SPEED DURING THE PERIOD.

- **WIND DIRECTION (COLUMN 3):**

1. RECORD TRUE WIND DIRECTION **FROM** WHICH THE WIND IS BLOWING, TO THE NEAREST TEN DEGREES.
2. ENTER **"000"** WHEN THE WINDS ARE CALM.
3. ENTER THE MEAN WIND DIRECTION WHEN **WIND DIRECTION VARIES BY 60 DEG OR MORE** AND WIND SPEEDS ARE **GREATER THAN 06 KNOTS.**

EXAMPLE: (360, 280, WOULD BE 320)

TYPE METAR SPECI	DATE & TIME (X) UTC ( ) LST	WIND DIRECTION (true)	WIND SPEED (knots)	WIND GUST (knots)	WIND VARIABILITY (true)	VISIBILITY (nm)
1	2	3	4	5	6	7
ME	1156	320				
ME	1258	310				
SP	1327	000				

WIND: SPEED, GUSTS & VARIABILITY (COLS 4, 5, & 6)

- WIND SPEED (COL 4):
  - RECORD WIND SPEED IN WHOLE KNOTS.
  - FOR CALM WINDS ENTER **"00"**
  - SPEEDS <10 KNOTS PREFIX WITH A ZERO, EX. **"07"**

- WIND GUSTS (COL 5) (AG):
  - ENTER WIND GUSTS IN **COL 5** WHEN THE WIND **SPEED** FLUCTUATES **10 KNOTS** OR MORE BETWEEN PEAKS & LULLS.
  - PREFIX SPEED OF GUST WITH A **"G"**.

- WIND VARIABILITY (COL 6):
  - ENTER WHEN THE WIND **DIRECTION** VARIES BY **60 DEGREES** OR MORE AND WIND SPEEDS ARE **> 06 KNOTS**.
  - ENTER THE EXTREMES OF DIRECTIONAL VARIABILITY.

TYPE METAR SPECI	DATE & TIME (X) UTC ( ) LST	WIND DIRECTION (true)	WIND SPEED (knots)	WIND GUST (knots)	WIND VARIABILITY (true)	VISIBILITY (nm)
1	2	3	4	5	6	7
ME	1156	320	12	G20	280V360	
ME	1258	310	06			
SP	1327	000	00			

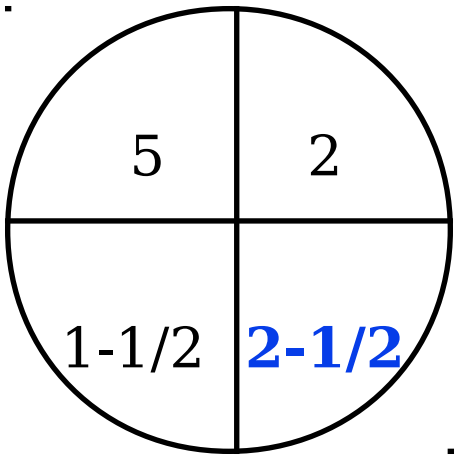
VISIBILITY (COL 7)

- **PREVAILING VISIBILITY**: THE GREATEST DISTANCE THAT OBJECTS CAN BE SEEN THROUGHOUT AT LEAST 1/2 OF THE HORIZON CIRCLE, NOT NECESSARILY CONTINUOUS (**USE 4 SECTORS**).

DETERMINING PREVAILING VISIBILITY:

1. **DETERMINE THE VALUES OF THE HORIZONS FOUR SECTORS THAT YOUR GOING TO USE.**
2. **CHOOSE THE 2ND HIGHEST VALUE (2-1/2).**
3. **THIS IS YOUR PREVAILING VISIBILITY (2-1/2).**

FOUR SECTORS	
VISIBILITY (MILES)	**APPROXIMATE DEGREES**
5	**NW 90**
2 1/2*	**SW 90**
----------	**180**
2	**NE 90**
1 1/2	**SE 90**



TYPE METAR	DATE & TIME	WIND				VISIBILITY
		DIRECTION	SPEED	GUST	VARIABILITY	
SPECI	(X) UTC	(true)	(knots)	(knots)	(true)	
	( ) LST					
1	2	3	4	5	6	**7**
ME	1156	320	12	G20	280V360	**7**
ME	1258	310	06			**3**
SP	1327	000	00			**21/2**

VISIBILITY (COL 7 CONT)

ENTER ONLY THE VISIBILITY VALUES LISTED IN THE TABLE BELOW:

NOTE: DO NOT INCLUDE PRESENT WEATHER OBSTRUCTIONS FOR VISIBILITY'S GREATER THAN 6 NM.

REPORTABLE VALUES MANUAL		
0	2-1/2	**10**
1/16	3	
1/8	4	
1/4	5	
1/2	6	
1	**7**	
1-1/2	**8**	
2	**9**	

TYPE METAR	DATE & TIME	WIND				VISIBILITY
		DIRECTION	SPEED	GUST	VARIABILITY	
SPECI	(X) UTC	(true)	(knots)	(knots)	(true)	
	( ) LST					
1	2	3	4	5	6	7
ME	1156	320	12	G20	280V360	7
ME	1258	310	06			3
SP	1327	000	00			2 1/2

REVIEW (COLS 1-7)

- **COLS 1 AND 2:**
  - ***METAR*** IS A STANDARD HOURLY OBSERVATION.
  - ***SPECIAL*** IS FOR SIGNIFICANT EVENTS.
  - ***TIME:*** ENTER TIMES FROM **55 TO 59** MINUTES PAST THE HOUR ENTER TIME OF SPECIAL EVENT OCCURRED.
- **COL 3:**
  - ENTER WIND DIRECTION IN TENS OF DEGREES (310, 050, ETC…)
  - ENTER **"000"** FOR CALM WINDS
- **COL 4**:
  - ENTER WIND SPEED IN WHOLE KNOTS (05, 10,30, ETC…).
  - ENTER **"00"** FOR CALM WINDS, ALWAYS AT LEAST 2 DIGITS
- **COLS 5 AND 6:**
  - ENTER GUSTS (AG) ONLY WHEN OBSERVED WINDS FLUCTUATE 10 KNOTS OR MORE BETWEEN PEAKS AND LULLS.
  - ENTER RANGE OF VARIABILITY WHEN WIND **DIRECTION VARIES BY 60 DEGREES OR MORE & WIND SPEEDS ARE GREATER THAN 06 KNOTS.**
- **COL 7:**

TYPE METAR SPECI	DATE & TIME (X) UTC ( ) LST	WIND				VISIBILITY (nm)
		DIRECTION (true)	SPEED (knots)	GUST (knots)	VARIABILITY (true)	
1	2	3	4	5	6	7
ME	1156	320	12	G20	280V360	7
ME	1258	310	06			3
SP	1327	000	00			21/2

PRESENT WEATHER (COL 9)

ENTER PRESENT WEATHER IN ORDER OF PRECEDENCE.

- WHEN MORE THAN ONE TYPE OF PRESENT WEATHER IS REPORTED AT THE SAME TIME, REPORT IN THE FOLLOWING ORDER:

1. **TORNADIC ACTIVITY (INCL FUNNEL CLOUDS & WATERSPOUTS).**
   ***QM's are not required to take specials f**
   weather criteria; but it is recommended
2. **THUNDERSTORMS.**
3. **PRECIPITATION BASED ON INTENSITY THEN OBSTRUCTIONS**
4. **LEFT TO RIGHT IN TABLE ON NEXT SLI**

PRESENT WEATHER	SKY CONDITION	TEMP	DEW
		(C)	POINT
			(C)
9	10	11	12
HZ			
-SHRAFG			

PRESENT WEATHER TABLE

- **EXAMPLES:**

- THUNDERSTORM WITH A RAINSHOWER: TS
- LIGHT RAIN, DRIZZLE & FOG: -DZRAFG
- WATERSPOUT & MODERATE RAINSHOWER: +FCSHRA
- RAINSHOWER SOUTH: VCSHRA
- FOG & HAZE: FGHZ
- BLOWING SPRAY: BLPY

QUALIFIER		WEATHER PHENOMENA		
INIENSITY OR PROXIMITY	DESCRIPTOR	PRECIPITATION	OBSCURATION	OTHER
1	2	3	4	5
- Light	**MI** Shallow	**DZ** Drizzle	**BR** Mist	**PO** Well
Moderate	**PR** Partial	**RA** Rain	**FG** Fog	Developed
+ Heavy	**BC** Patches	**SN** Snow	**FU** Smoke	Dust/Sand
VC in the	**DR** Low Drifting	**SG** Snow Grains	**VA** Volcanic Ash	Whirls
vicinity	**BL** Blowing	**IC** Ice Crystals	**DU** Widespread	**SQ** Squalls
	SH Shower(s)	**PE** Ice Pellets	Dust	**FC** Funnel Cloud
	TS Thunderstorm	**GR** Hail	**SA** Sand	Tornado
		GS Small Hail	**HZ** Haze	Waterspout
		and/or Snow	**PY** Spray	**SS** Sandstorm
		Pellets		**DS** Duststorm
		UP Unknown		
		Precipitation		

1. Tornadoes and waterspouts shall be coded as +FC.

SKY CONDITION (COL 10)

- **SKY CONDITION DEFINITIONS:**

A . ***SKY COVER:*** THE AMOUNT OF THE CELESTIAL DOME HIDDEN BY CLOUDS OR AN OBSCURATION.

B. ***SUMMATION LAYER AMOUNT***: THE AMOUNT OF SKY COVER AT OR ABOVE EACH REPORTED LAYER. (BEGIN LOW, THEN MID, THEN HIGH). NO SINGLE CLOUD LAYER CAN HAVE A SUMMATION AMOUNT **GREATER THAN 8/8THS.**

C. ***LAYER HEIGHT***: THE HEIGHT OF THE BASE OF EACH REPORTED LAYER OF CLOUDS.

D. ***CEILING***: THE HEIGHT OF THE LOWEST LAYER OF CLOUDS THAT IS BROKEN OR OVERCAST **(GREATER THAN 4/8 OR 1/2 THE SKY).**

PRESENT WEATHER	SKY CONDITION	TEMP (C)	DEW POINT (C)	WET BULB (C)	ALTIMETER SETTING (ins)
9	10	11	12	20	13
	FEW010 SCT043 BKN180				
HZ	SCT008 BKN040				
-SHRAFG	BKN008 OVC025				

SKY CONDITION (COL 10 CONT)

CLOUDS TYPES AND HEIGHTS:

- **LOW CLOUDS** (NR SURFACE TO 6,500 FT)
  ST, SC, CU, TCU, & CB.
- **MIDDLE CLOUDS** (6,500 TO 23,000 FT)
  AS, AC, & NS (MAY DECREASE BELOW 6,500FT)
- **HIGH CLOUDS** (ABOVE 16,500 FT)
  CI, CS, CC
- ENTER CLOUDS BASE HEIGHTS IN HUNDREDS COL 10 ACCORDING TO THE FOLLOWING TABLE:

Range of Height Values (feet)	Reportable Increment (feet)
≤5,000	**To nearest 100**
>5,000 but <10,000	**To nearest 500**
>10,000	**To nearest 1,000**

EX: 043 IS 4,300 FT (NEAREST 100 FT)
180 IS 18,000 FT (NEAREST 1,000 FT)

			(C)	(C)
9	**10**	11	12	20
	FEW010 SCT043 BKN180			
HZ	**SCT008 BKN040**			
SHRA FG	**BKN008 OVC025**			

SKY CONDITION (COL 10 CONT)

STEPS FOR DETERMINING SKY COVER:

1 ESTIMATE THE AMOUNT OF SKY COVERED BY THE LOWEST LAYER.

2 DETERMINE IF ADDITIONAL LAYERS OF CLOUDS ARE PRESENT ABOVE THE LOWEST LAYER USING THE SUMMATION PRINCIPLE.

3 RECORD THE HEIGHT OF EACH CLOUD LAYER IMMEDIATELY FOLLOWING THE SKY COVER AMOUNT.

USE THE TABLE BELOW TO MATCH THE PROPER CONTRACTION TO THE AMOUNT FOR THE LAYER.

REPORTABLE CONTRACTION	MEANING	SUMMATION AMOUNT OF LAYER
VV	**Vertical Visibility**	**8/8**
SKC	**Clear**	**0**
FEW	**Few or Trace**	**1/8 - 2/8**
SCT	**Scattered**	**3/8 - 4/8**
BKN	**Broken**	**5/8 - 7/8**
OVC	**Overcast**	**8/8**

		(C)	POINT (C)	BULB (C)	SETTING (ins)
9	**10**	11	12	20	13
	FEW010 SCT043 BKN180				
HZ	**SCT008 BKN040**				
-SHRAFG	**BKN008 OVC025**				

OBTAINING ACCURATE TEMPERATURES

- ENSURE PSYCHROMETERS ARE USED IN SHADY, **WELL VENTILATED AREAS**.

- ENSURE PSYCHROMETERS ARE CLEAR OF AREAS THAT ARE SUBJECT TO:

1. **EXTERIOR VENTILATION DUCTS**
2. **NO VENTILATION**
3. **EXCESSIVE DECK PLATE HEATING**

- **ENSURE WET BULB WICK IS CLEAN AND WET PRIOR** TO OBTAINING TEMPERATURE.

USE THE TEMPERATURE OF THE DEW POINT

TABLE II-7-2 LOCATED ON PAGE II-7-14

TEMPERATURE/DEW POINT & WET BULB TEMPERATURE (COLS 11/12/20)

- **TEMPERATURE COL 11:**
  - RECORD THE DRY BULB TEMP TO THE NEAREST TENTH DEGREE **(CELSIUS).**
  - PREFIX SUBZERO TEMPERATURES WITH **"M".**
  - ADD A LEADING ZERO TO SINGLE DIGIT TEMPERATURES **(02.5, 05.7).**
- **DEWPOINT TEMP COL 12:**
  - RECORD THE DEW POINT TO NEAREST WHOLE DEGREE CELSIUS.
- **WET BULB TEMP COL 20:**
  - MEASURE THE LOWEST TEMPERATURE OBSERVED.
  - RECORD THE WET BULB TO NEAREST TENTH DEGREE CELSIUS.

				(C)	(ins)
9	10	11	12	20	13
	FEW010 SCT043 BKN180	10.0	08	07.5	
HZ	SCT008 BKN040	10.0	08	08.3	
-SHRAFG	BKN008 OVC025	10.0	09	09.1	

BAROMETRIC PRESSURE COMPUTATIONS

- **3 SEPARATE PRESSURE PARAMETERS:**
  1. STATION PRESSURE (COL 22)
  2. SEA LEVEL PRESSURE (COL 22A)
  3. ALTIMETER SETTING (COL 13)

- **STEPS TO FOLLOW:** ***(STATION PRESSURE)***
  1. READ THE BAROMETER IN INCHES, ROUNDED TO THE NEAREST 0.005 inch Hg.
     EX. 30.252 WOULD BE **30.250**
  2. ENTER THIS VALUE AS YOUR STATION PRESSURE IN ***COLUMN 22.***

- **ENTER/COMPUTE STATION PRESSURE (COL 22), SEA LEVEL PRESSURE (COL 22A), AND THEN ALTIMETER SETTING (COL 13).**

REMARKS AND SUPPLEMENTAL CODED DATA	STATION PRESSURE (inches)	SEA LEVEL PRESSURE hPa	TOTAL SKY COVER	OBSERVER'S INITIALS
14	22	22a	17	15
(NOT RQD FOR QM'S)	30.250			
NOT RQD FOR QM'S	30.050			
NOT RQD FOR QM'S	29.965			

SEA LEVEL PRESSURE (COL 22a)

COMPUTATION PROCEDURES:

1. DETERMINE THE HEIGHT OF THE BAROMETER ABOVE SEA LEVEL: (CG-47 CLASS **APPROX 60 FT**)
2. USING AN ADDITIVE REDUCTION CONSTANT TABLE, DETERMINE THE CORRECTION FOR A BAROMETER AT **60 FT**. (TABLE II-6-2)

   STANDARD CORRECTION 60FT = .064”
3. ADD CORRECTION TO THE STATION PRESSURE:

   STATION PRESSURE: **30.250**

   CORRECTION: **+.064**

   SEA LEVEL PRESSURE: **30.314 INCHES**

4. CONVERT TO MILLIBARS USING AVAILABLE CONVERSION TABLES (TABLE II-6-1)

   30.314 = 1026.5 MILLIBARS.
5. ENTER **265** IN COL 22a

REMARKS AND SUPPLEMENTAL CODED DATA	STATION PRESSURE (inches)	SEA LEVEL PRESSURE	TOTAL SKY COVER	OBSERVER'S INITIALS
14	22	22a	17	15
NOT REQUIRED	30.250	265		
NOT REQUIRED	30.050			
NOT REQUIRED	29.965			

ALTIMETER SETTING (COL 13)

- ALTIMETER SETTING IS A PRESSURE VALUE USED BY PILOTS. THIS VALUE MUST BE CORRECTED TO THE HEIGHT OF THE FLIGHT DECK:
- **NOT REQUIRED FOR QM'S ON SHIPS WITHOUT AN AIR DET.**

- **COMPUTATION PROCEDURES:**

1. DETERMINE STATION PRESSURE: **30.250"**
2. ADD FLIGHT DECK ADDITIVE CONSTANT. THIS VALUE IS THE ***DISTANCE FROM THE BAROMETER TO THE FLIGHT DECK***: (WE WILL USE **25 FT**).

STATION PRESSURE: 30.250
25FT CORRECTION: + .027
ALTIMETER SETTING: 30.277
ROUND: 30.277 TO 30.275

3. **ENT**
NEAREST 1/100TH

PRESENT WEATHER	SKY CONDITION	TEMP (C)	DEW POINT	WET BULB (C)	ALTIMETER SETTING (ins)
9	10	11	12	20	13
	FEW10 SCT43 BKN180	10.2	08	07	3028
HZ	SCT8 BKN40	10.2	08	08	
-SHRAFG	BKN8 0VC25	10.2	09	09	

PRESSURE COMPUTATION EXERCISE

GIVEN THE FOLLOWING, DETERMINE SEA LEVEL PRESSURE AND ALTIMETER SETTINGS.

REQUIRED DATA:

BAROMETER HEIGHT : **55 FT**

BAROMETER TO FLIGHT DECK DISTANCE: **25 FT**

COL 22: **30.050** **COL 22**: **29.965**

CORRECTION
SEA LVL PRES
CONVERT TO MB
COL 22a ENTRY
ALTIMETER COR
ALTIMETER
COL 13 ENTRY

CORRECTION
SEA LVL PRES
CONVERT TO MB
COL 22a ENTRY
ALTIMETER COR
ALTIMETER
COL 13 ENTRY

TABLE II-6-2, PG II-6-13

STATION ELEV (FT)	INCHES Hg	Mb	STATION ELEV (FT)	INCHES Hg	Mb	STATION ELEV (FT)	INCHES Hg	Mb
25	.027	.903	37	.039	1.337	49	.052	1.771
26	.028	.939	38	.041	1.373	50	.053	1.807
27	.029	.976	39	.042	1.409	51	.054	1.843
28	.030	1.012	40	.043	1.445	52	.055	1.879
29	.031	1.048	41	.044	1.481	53	.057	1.915
30	.032	1.084	42	.045	1.518	54	.058	1.951
31	.033	1.120	43	.046	1.554	55	.059	1.987
32	.034	1.156	44	.047	1.590	56	.060	2.023
33	.035	1.192	45	.048	1.626	57	.061	2.060
34	.036	1.229	46	.049	1.662	58	.062	2.096
35	.037	1.265	47	.050	1.698	59	.063	2.132
36	.038	1.301	48	.051	1.734	60	.064	2.168

PRESSURE COMPUTATIONS ANSWERS

GIVEN THE FOLLOWING, DETERMINE SEA LEVEL PRESSURE AND ALTIMETER SETTINGS.

REQUIRED DATA:

BAROMETER HEIGHT : **55 FT**

BAROMETER TO FLIGHT DECK DISTANCE: **25 FT**

COL 22:	**30.050**	**COL 22**:	**29.965**
CORRECTION	**+.059**	CORRECTION	**+.059**
SEA LVL PRES	**30.109**	SEA LVL PRES	**30.024**
CONVERT TO MB	**1019.6**	CONVERT TO MB	**1016.7**
COL 22a ENTRY	**196**	***COL 22a ENTRY***	**167**
ALTIMETER COR	**+.027**	ALTIMETER COR	**+.027**
ALTIMETER	**30.077**	ALTIMETER	**29.992**
COL 13 ENTRY	***008***	***COL 13 ENTRY***	**999**

.

PRESENT WEATHER	SKY CONDITION	TEMP (C)	DEW POINT	WET BULB (C)	ALTIMETER SETTING (ins)
9	10	11	12	20	**13**
	FEW10 SCT43 BKN180	10	08	07	**028**
HZ	SCT 8 BKN40	10	08	08	**008**
-SHRAFG	BKN8 OVC25	10	09	09	**999**

REMARKS AND SUPPLEMENTAL CODED DATA	STATION PRESSURE (inches)	SEA LEVEL PRESSURE	TOTAL SKY COVER	*OBSERVER'S INITIALS*
14	**22**	**22a**	17	*15*
NOT REQUIRED	**30.250**	**265**		
NOT REQUIRED	**30.050**	**196**		
NOT REQUIRED	**29.965**	**167**		

TOTAL SKY COVER & OBSERVER INITIALS (COLS 17 & 15)

- **COLUMN 17 TOTAL SKY COVER**:
  ENTER THE TOTAL AMOUNT OF OBSERVED CLOUDS COVERING THE CELESTIAL DOME
  ENTER ONLY 0 THROUGH 8

- **OBSERVERS INITIALS:**
  PRINT YOUR INITIALS **CLEARLY**

REMARKS AND SUPPLEMENTAL CODED DATA	STATION PRESSURE (inches)	SEA LEVEL PRESSURE	TOTAL SKY COVER	OBSERVER'S INITIALS
14	22	22a	**17**	**15**
NOT REQUIRED	30.250	265	**5**	***GB***
NOT REQUIRED	30.050	196	**7**	***CS***
NOT REQUIRED	29.965	167	**8**	***DC***

REVIEW (COLS 9-22a)

- **COL 09 - PRESENT WEATHER:**
  - ENTER PRESENT WEATHER IN ORDER OF PRECEDENCE USING TABLE II-5-1 OF 3144.1D.

- **COL 10 - SKY CONDITION:**
  - USE TABLE II-3-8 OF 3144.1D TO MATCH THE PROPER SKY COVER CONTRACTION TO THE AMOUNT OF EACH LAYER PRESENT.
  - USE THE SUMMATION PRINCIPLE TO ADD UP INDIVIDUAL CLOUD LAYERS FROM THE LOWEST TO THE HIGHEST LAYER.
  - CUMULATIVE TOTALS OF ALL LAYERS CANNOT EXCEED 8/8THS.

- **COLS 11,12,20 - TEMPERATURE, DEWPOINT & WET BULB :**
  - ENSURE ***AIR TEMP*** **AND** ***WET BULB TEMP*** ARE TAKEN IN AN AREA THAT IS **SHADY, WELL VENTILATED** AND FREE FROM SHIPBOARD VENTILATION SOURCES.
  - ENSURE ***WET BULB*** SOCK IS CLEAN AND WET.
  - CALCULATE DEWPOINT USING **TABLES II-7-2 OF THE 3144.1D**.

REVIEW (COLS 9-22a CONT)

BAROMETRIC PRESSURE COLS 13, 22, 22a:

- **COL 22 - STATION PRESSURE:**
  - PRESSURE READING TAKEN DIRECTLY FROM THE BAROMETER (ON BRIDGE).

- **COL 22a - SEA LEVEL PRESSURE:**
  - USING THE ADDITIVE CONSTANT TABLE II-6-2 IN THE 3144.1D, ADD THE CORRECTION VALUE THAT REPRESENTS THE HEIGHT OF THE BAROMETER ABOVE SEA LEVEL .
  - CONVERT TO MILLIBARS FOR COL 22a ENTRY.

- **COL 13 - ALTIMETER SETTING:**
  - MAY BE REQUIRED ON SHIPS WITH A FLIGHT DECK; OTHERWISE, THIS IS NOT A REQUIRED ENTRY.
  - ADD THE FLIGHT DECK CORRECTION VALUE FROM TABLE II-6-2 TO THE STATION PRESSURE.

REVIEW (COLS 9-22a CONT)

- **COL 14 - REMARKS:**
  - NOT REQUIRED FOR QUARTERMASTERS, BUT SEVERE WEATHER CONDITIONS SHOULD BE NOTED WHENEVER POSSIBLE.

- **COL 17 - TOTAL SKY COVER:**
  - USING THE CONTRACTIONS FROM COL 10, ENTER THE VALUE THAT REPRESENTS THE TOTAL COVERAGE.
  - CAN BE NO MORE THAN 8 OR 8/8TH'S.

- **COL 15 - OBSERVERS INITIALS:**
  - ENTER OBSERVERS INITIALS (NEATLY).

SHIPS POSITION, STATUS & SEA CONDITIONS (COLS A-G)

COL A: SHIPS POSITION (LATITUDE & LONGITUDE)

1. "Q" QUADRANT OF THE GLOBE

WEST LONGITUDE: NORTH LATITUDE = 7
SOUTH LATITUDE = 5
EAST LONGITUDE: NORTH LATITUDE = 1
SOUTH LATITUDE = 3

2. LATITUDE (3 COLS):

- ENTER IN WHOLE DEGREES AND TENTHS

  EX: 32.47.4N = 32.7

  ENTER La 3, La 2, La 7

3. LONGITUDE (4 COLS):

- ENTER IN WHOLE DEGREES AND TENTHS

  EX: 125.36.5W = 125.6W

- **ENTER Lo 1, Lo 2, Lo 5, Lo 6**

SHIP'S POSITION (A)								SHIP'S COURSE	SHIP'S SPEED	SEA WATER TEMP 1/10 C	SEA WAVES PERIOD HEIGHT	PRIMARY SWELL DIRECTION PERIOD HEIGHT	SECONDARY SWELL DIRECTION PERIOD HEIGHT
LAT				LON									
Q	La	La	La	Lo	Lo	Lo	Lo						
								B	C	D	E	F	G
7	3	2	7	1	2	5	6						
7	3	2	7	1	2	5	6						
7	3	2	7	1	2	5	6						

SHIPS COURSE & SPEED AND SEA TEMP (COLS B,C AND D)

- **COL B SHIPS COURSE:**
  - ENTER SHIPS TRUE COURSE **TO THE NEAREST DEGREE**. **EX:** 321, 320, 333. 335
  - ENTER **"-"** WHEN SHIP IS NOT UNDERWAY.

- **COL C SHIPS SPEED:**
  - ENTER SHIPS SPEED TO THE **NEAREST WHOLE KNOT**.
  - ENTER "**-**" WHEN THE SHIP IS NOT UNDERWAY.
  - PREFIX SPEEDS LESS THAN 10 KNOTS WITH A ZERO.

- **SEA WATER TEMP:**
  - ENTER SEA TEMP TO THE NEAREST **1/10** OF A DEGREE CELSIUS.
  - ENTER **"M**' FOR MISSING DATA.
  - **EX:** 10.5, 10.0

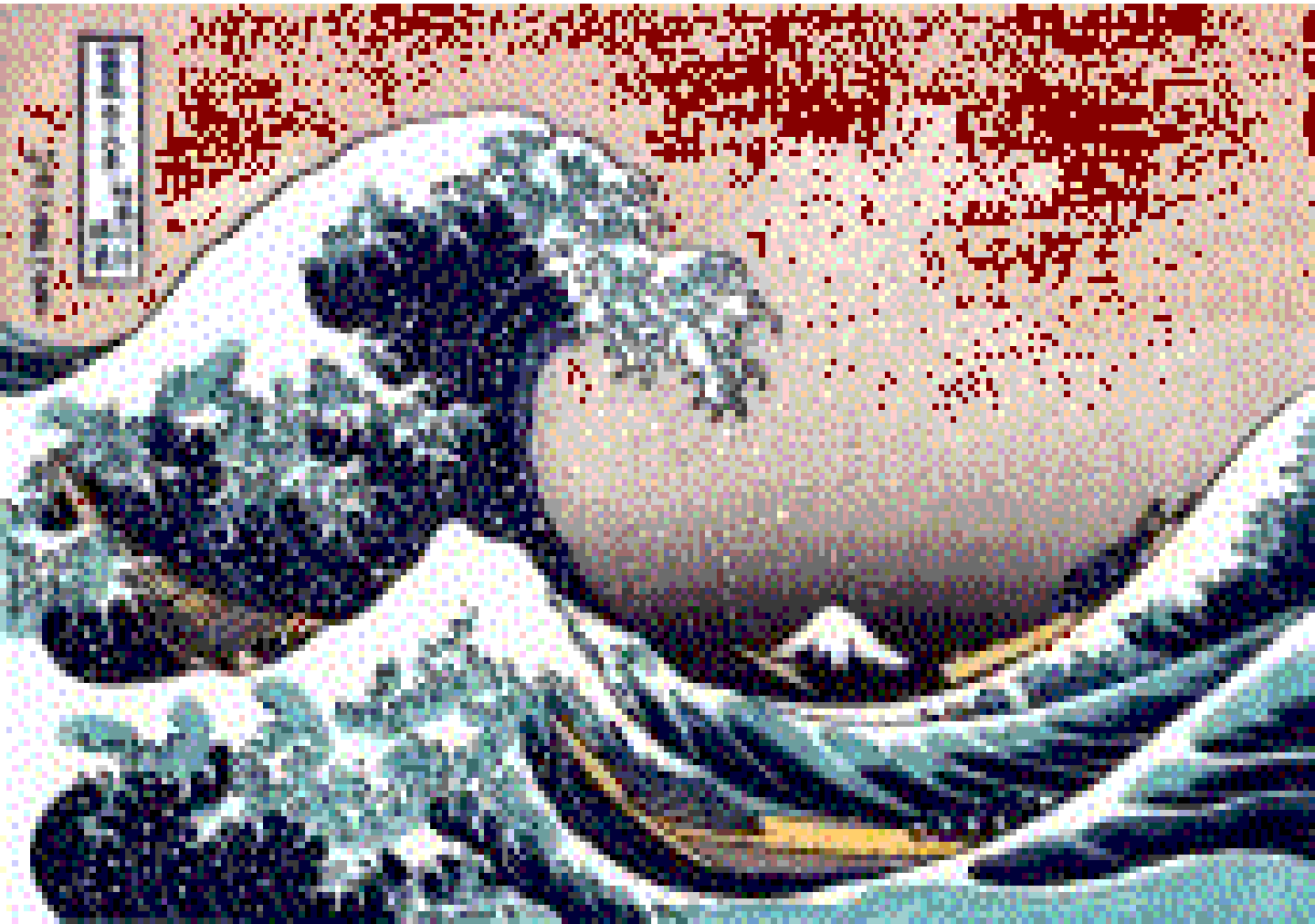
SHIP'S POSITION (A)								SHIP'S COURSE	SHIP'S SPEED	SEA WATER TEMP 1/10 C	SEA WAVES PERIOD HEIGHT	PRIMARY SWELL DIRECTION PERIOD HEIGHT	SECONDARY SWELL DIRECTION PERIOD HEIGHT
	LAT			LON									
Q	La	La	La	Lo	Lo	Lo	Lo						
								B	C	D	E	F	G
7	3	2	7	1	2	5	6	330	08	09.7			
7	3	2	7	1	2	5	6	090	15	09.5			
7	3	2	7	1	2	5	6	-	-	10.0			

SEA WAVES DEFINITIONS

- **SEA WAVES:** SEA WAVES ARE WAVES GENERATED BY THE TRUE WIND OBSERVED IN COLS 3 & 4.

- **WAVE PERIOD:** THE TIME INTERVAL BETWEEN THE PASSAGE FROM ONE WAVE CREST TO THE NEXT.

- **SEA WAVE HEIGHT:** THE HEIGHTS OF THESE WAVES WILL DEPEND UPON THE AVERAGE SPEED OF THE WINDS OVER A GIVEN PERIOD OF TIME.



SEA WAVES (COL E)

- **AVERAGE WAVE PERIOD:**
  - ENTER IN SECONDS USING TENS AND UNITS
  - FOR CALM SEAS ENTER **"00"**
  - FOR A CONFUSED SEA WAVE STATE (CANNOT DETERMINE **PERIOD** ENTER **"99"**
- **SIGNIFICANT WAVE HEIGHT:**
  - SIGNIFICANT WAVE HEIGHT IS THE HIGHEST **1/3** OF WAVES OBSERVED. ENTER USING TENS AND UNITS
  - ENTER **"00"** FOR CALM SEAS.
- **NOTE:** SEA WAVE PERIOD MAY BE CONFUSED, BUT THE HEIGHT WILL NOT.

SWELL WAVES

- **WHAT ARE SWELL WAVES:**
  - SWELL WAVES ARE WAVES GENERATED IN AN AREA WELL AWAY FROM YOUR VESSEL.

- **CHARACTERISTICS:**
  - SWELLS OFTEN COME FROM A DIRECTION THAT IS DIFFERENT FROM THE TRUE WIND. (30 OR MORE DEGREES)
  - LONGER WAVE PERIOD (LONGER WAVELENGTH)

    OFTEN CAUSES THE MOST NOTABLE PITCH/ROLL.

ENTERING SWELL WAVES (COLS F & G)

- **COL F:** PRIMARY SWELL WAVE DATA
- **COL G:** SECONDARY SWELL WAVE DATA

- **SWELL DIRECTION** (FIRST 2 DIGITS IN EACH GROUP):
  - ENTER IN HUNDREDS AND TENS OF DEGREES

- **SWELL PERIOD** (SECOND 2 DIGITS IN EACH GROUP):

  ENTER THE PERIOD OF THE SWELLS IN SECONDS.
  - ENTER "99" IF CONFUSED.

- **SWELL HEIGHT** (LAST 2 DIGITS IN EACH GROUP):

  ENTER THE SIGNIFICANT WAVE HEIGHT IN FEET

SHIP'S COURSE	SHIP'S SPEED	SEA WATER TEMP 1/10 C	SEA WAVES PERIOD HEIGHT	PRIMARY SWELL DIRECTION PERIOD HEIGHT	SECONDARY SWELL DIRECTION PERIOD HEIGHT
B	C	D	E	**F**	G
076	08	09.7	0304	**360808**	131002
090	15	09.5	0202	**359905**	
		10.0	0000	**350802**	

REVIEW (COLS A-G)

- **COL A - LATITUDE & LONGITUDE:**
  - ENTER IN WHOLE DEGREES AND TENTHS
  - DETERMINE TENTHS DIGIT BY DIVIDING BY 6 AND DISREGARDING THE REMAINDER.
- **COLS B & C - SHIPS COURSE & SPEED:**
  - ENTER COURSE TO THE NEAREST DEGREE
  - ENTER **"-"** WHEN ANCHORED
  - PREFIX SPEEDS <10 KNOTS WITH A ZERO.
- **COL D - SEA WATER TEMP:**
  - ENTER TO THE NEAREST **1/10TH DEGREE CELSIUS**.
- **COL E - SEA WAVES:**
  - ENTER PERIOD IN SECONDS AND HEIGHT IN FEET
  - ENTER **"0000"** FOR CALM
  - ENTER **"99"** FOR CONFUSED PERIOD **(9903)**
- **COLS F & G - SWELL WAVES:**

CRITERIA FOR ENTERING BOTH IS IDENTICAL (2 DIGITS)

  - ENTER DIRECTION IN HUNDREDS AND TENS OF DEGREES.
  - ENTER PERIOD IN SECONDS (**99** FOR CONFUSED)
  - ENTER SWELLS IN FEET (**SIGNIFICANT WAVE HEIGHT**)

SHIP SYNOPTIC CODE (SECT 1)

- **<u>BBXX</u> (STANDARD ENTRY FOR ALL SHIPS)**
- **SHIPS FOUR LETTER CALL SIGN OR IDENTIFIER**
- **EX: NJAM, NTIC, ETC…**

					SECTION 0													
										POSITION OF SHIP							
	SHIP FOUR LETIER CALL SIGN				DAY OF MONTH		TIME OF OBSERVATI NEAREST HOUR		WIND INDICATOR (3	POSITION INDICATO	LATITUDE			QUADRANT OF GLO	LONGITUDE			
					01-31 UTC		00-23 UTC				DEGREES & TENTHS				DEGREES & TENTHS			
BBXX	OOOO				Y	Y	G	G	Iw	99	La	La	La	Qc	Lo	Lo	Lo	Lo
BBXX	N	J	A	M						99								
BBXX	N	J	A	M						99								
BBXX	N	J	A	M						99								

SHIP SYNOPTIC CODE (SECT 1 CONT)

- YYGGIw 99LaLaLa QcLoLoLoLo

YY: DAY OF THE MONTH

ENTER 2 DIGITS 01 **THROUGH** 31

GG: TIME OF SYNOPTIC

ENTER 00, 03, 06, 09, 12, 15, 18, 21,

Iw: WIND SPEED INDICATOR

ENTER "4" **IF MEASURED USING THE SHIPS ANEMOMETER ENTER** "3" **IF WINDS ARE ESTIMATED (*PMQ-3 READINGS ARE MEASURED*).**

					SECTION 0														
										POSITION OF SHIP									
	SHIP FOUR LETTER CALL SIGN				**DAY OF MONTH**		**TIME OF OBSERVATI NEAREST HOUR**		**WIND INDICATOR (3**	**POSITION INDICAT**	**LATITUDE**			**QUADRANT OF GLO**	**LONGITUDE**				
					01-31 UTC		**00-23 UTC**				**DEGREES & TENTHS**				**DEGREES & TENTHS**				
BBXX	OOOO				Y	Y	G	G	Iw	99	La	La	La	Qc	Lo	Lo	Lo	Lo	
BBXX	N	J	A	M	**0**	**3**	**0**	**0**	**4**	99									
BBXX	N	J	A	M	**0**	**3**	**0**	**6**	**4**	99									
BBXX	N	J	A	M	**0**	**3**	**1**	**2**	**4**	99									

SHIP SYNOPTIC CODE (SECT 1 CONT)

- LATITUDE AND LONGITUDE DATA IS ENTERED EXACTLY THE SAME AS IN COLUMN A (PART A ABOVE)
- DIVIDE TENTHS DIGIT BY 6 AND DISREGARD THE REMAINDER.

SECTION 0																		
										POSITION OF SHIP								
	SHIP FOUR LETIER CALL SIGN				DAY OF MONTH 01-31 UTC		TIME OF OBSERVATION NEAREST HOUR 00-23 UTC		WIND INDICATOR (3 OR 4)	POSITION INDICATOR	LATITUDE DEGREES & TENTHS			QUADRANT OF GLOBE	LONGITUDE DEGREES & TENTHS			
BBXX	OOOO				Y	Y	G	G	Iw	99	La	La	La	Qc	Lo	Lo	Lo	Lo
BBXX	N	J	A	M	0	3	0	0	4	**99**	**3**	**2**	**7**	**7**	**1**	**2**	**5**	**6**
BBXX	N	J	A	M	0	3	0	6	4	**99**	**3**	**2**	**7**	**7**	**1**	**2**	**5**	**6**
BBXX	N	J	A	M	0	3	1	2	4	**99**	**3**	**2**	**7**	**7**	**1**	**2**	**5**	**6**

SHIP SYNOPTIC CODE (IrIxhVV)

Ir: PRECIPITATION DATA INDICATOR

ALWAYS ENTER 4 SHIPS DO NOT MEASURE PRECIPITATION.

Ix: PRESENT WEATHER DATA INDICATOR

ENTER 1 TO INCLUDE PRESENT/PAST WEATHER GROUP (7wwW1W2)

OR ENTER 3 TO OMIT (NONE OBSERVED)

h: HEIGHT OF THE BASE OF THE LOWEST CLOUD. *(LOW COL 10 ER IN COL 10)*

CODE FOR CLOUD HEIGHT, h	
CODE FIGS.	HEIGHT IN FEET
0	00 TO 99
1	100 TO 299
2	300 TO 699
3	700 TO 999
4	1000 TO 1999
5	2000 TO 3299
6	3300 TO 4899
7	4900 TO 6499
8	6500 TO 7999
9	8000 OR ABV OR NO CLOUDS
/	HEIGHT NOT KNOWN

SHIP SYNOPTIC CODE (IrIxhVV CONT)

- **"VV" - VISIBILITY:**

  ENTER THE CODE FIGURE (SEE TABLE) THAT

  REPRESENTS THE LOWEST VISIBILITY VALUE

  OBSERVED (LOWEST VALUE IN THE SECTORS).

- **THIS IS NOT NECESSARILY THE SAME AS THE VALUE ENTERED IN *COL 7 OF PART A.***

- ***CODE VALUE "90-98" WILL BE THE HIGHEST VALUE.***

CODE

Ir	Ix	h	VV
4	**1**	**3**	**96**
4	3	7	96
4	3	9	97

TABLE

VISIBILITY NM	(VV) VISIBILITY CODE FIGS.
<1/16	90
1/16	91
1/8	92
1/4	93
1/2	94
1 OR 1/1/2	95
2, 2-1/2, OR 3	96
5, 6, 7, OR 8	97
9 OR 10	98
NOT REPORTED	99

SHIP SYNOPTIC CODE SHIPS COURSE, SPEED & APPARENT WIND DATA

THIS INFORMATION IS ENTERED ON THE FORM BUT *NOT TRANSMITTED*

PRECIPITATION DATA INDICATOR (	WEATHER CODE INDICATOR (1 OR	HEIGHT OF LOWEST CLOUD	VISIBILITY	SHIP'S COURSE AT TIME OF OBS	SHIP'S SPEED AT TIME OF OBS	APPARENT DIRECTION RELATIVE TO SHIP FROM 0-360	APPARENT SPEED
			90-99	TRUE	KNOTS		KNOTS
				ESTIMATED		( )	
				ANEMOMETER		[X]	
Ir	Ix	h	V	V	AN. HGT.	33m	
4	1	3	9	6	076	08	350	04
4	3	7	9	6	090	15	330	12
4	3	9	9	7			080	08

SHIP SYNOPTIC CODE (Nddff)

"N" - TOTAL AMOUNT OF SKY COVER IN EIGHTHS

"dd" - TRUE WIND DIRECTION IN TENS OF DEGREES FROM THE DIRECTION THE WIND IS BLOWING.

- ENTRY WILL BE THE *SAME AS COL 3 OF PART A*

"ff" - TRUE WIND SPEED IN KNOTS (07, 32).

	SECTION 1												
	TRUE WIND			HIGH SPEED WIND		TEMPERATURES							
TOTAL CLOUD AMOUNT (1-8)	DIRECTION FROM 01-36		SPEED KNOTS	GROUP INDICATOR	SPEED KNOTS	GROUP INDICATOR	SIGN OF TEMP (+=0,-=1)	DRY BULB °C		(Degrees & Tenths)			
N	d	d	f	f	00	f	f	f	1	S_n	T	T	T
5	**3**	**3**	**1**	**2**									
7	**3**	**1**	**0**	**6**									
8	**0**	**0**	**0**	**0**									

SHIP SYNOPTIC CODE HIGH SPEED WIND & TEMPERATURE

- HIGH SPEED WIND: OMIT IF WINDS ARE LESS THAN 100 KNOTS
  TEMPERATURE & DEWPOINT:
  - **(1snTTT 2snTdTdTd)**
  - **"sn" SIGN OF TEMPERATURE (POSITIVE OR NEGATIVE)**
    0 = POSITIVE OR ZERO
    1 = NEGATIVE
  - **TTT AIR TEMP IN TENTHS OF DEGREE CELSIUS**
    TdTd/ DEWPOINT TEMP TO THE NEAREST WHOLE DEGREE CELSIUS

EXAMPLES: **TEMP: 10.3 C DEWPOINT: 8.0 C**
TEMP: 00.5 C DEWPOINT: -2.0 C
TEMP: -05.0 C DEWPOINT: -10.0 C

WIND														
GROUP INDICATOR	SPEED			GROUP INDICATOR	SIGN OF TEMP (+=0,-=1)	Dry Bulb	DRY BULB	(Degrees & Tenths)	GROUP INDICATOR	SIGN OF DP (+=0, -=1)	DEW POINT	DEW POINT	Dewpoint (Whole Degrees)
	KNOTS					'C							
00	f	f	f	1	S_n	T	T	T	2	S_n	T_d	T_d	T_d
				1	**0**	**1**	**0**	**3**	**2**	**0**	**0**	**8**	
				1	**0**	**0**	**0**	**5**	**2**	**1**	**0**	**2**	/
				1	**1**	**0**	**5**	**0**	**2**	**1**	**1**	**0**	/

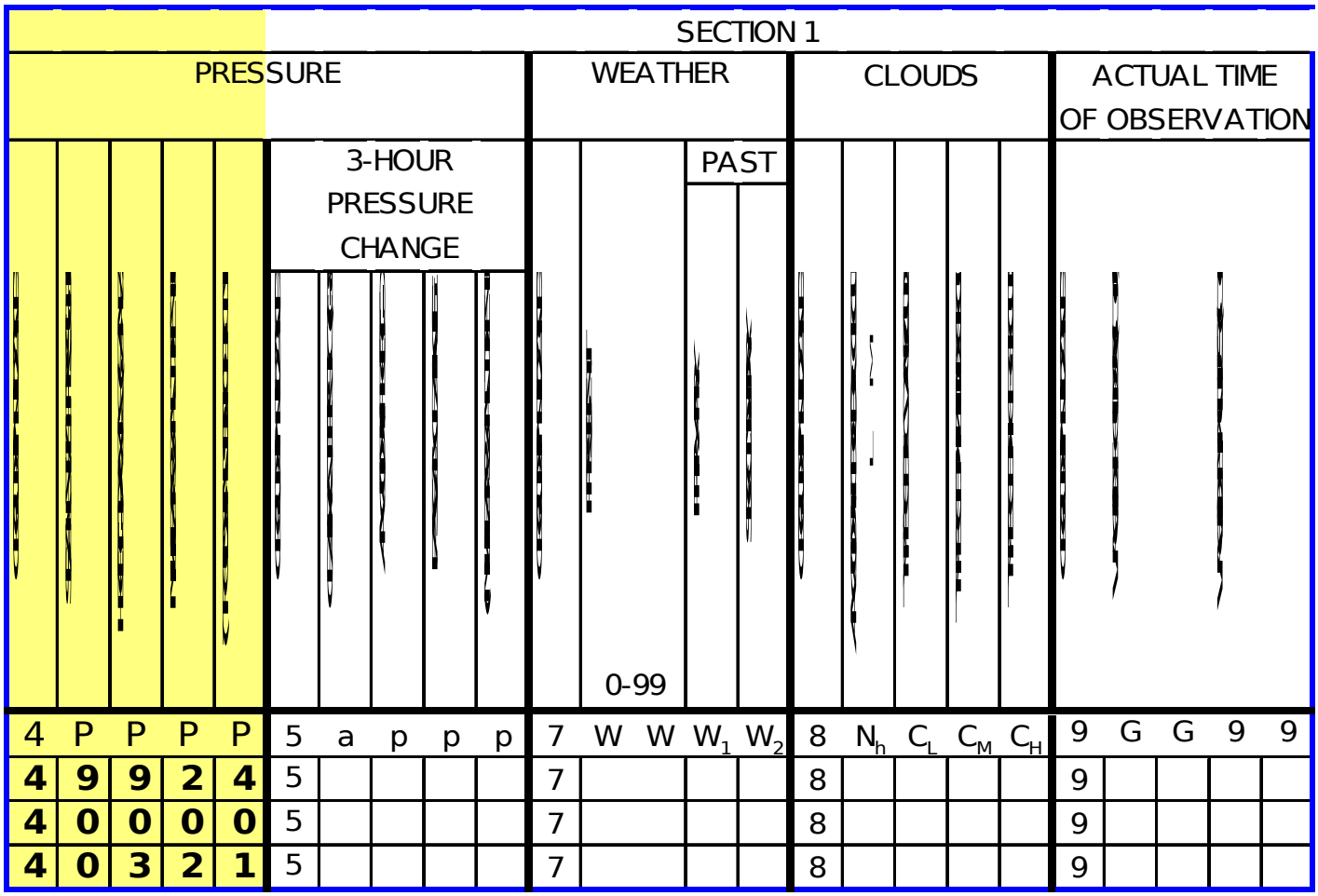
/

SHIP SYNOPTIC CODE SEA LEVEL PRESSURE (4PPPP)

- ENTERED IN TENS, UNITS, AND TENTHS OF A MILLIBAR

- WHEN SEA LEVEL PRESSURE IS 1000 MB OR GREATER, THE LEADING 1 IS OMITTED.

EXAMPLES: 992.4 MB
1000.0 MB
1032.1 MB



SHIP SYNOPTIC CODE PRESSURE TENDENCY (5appp)

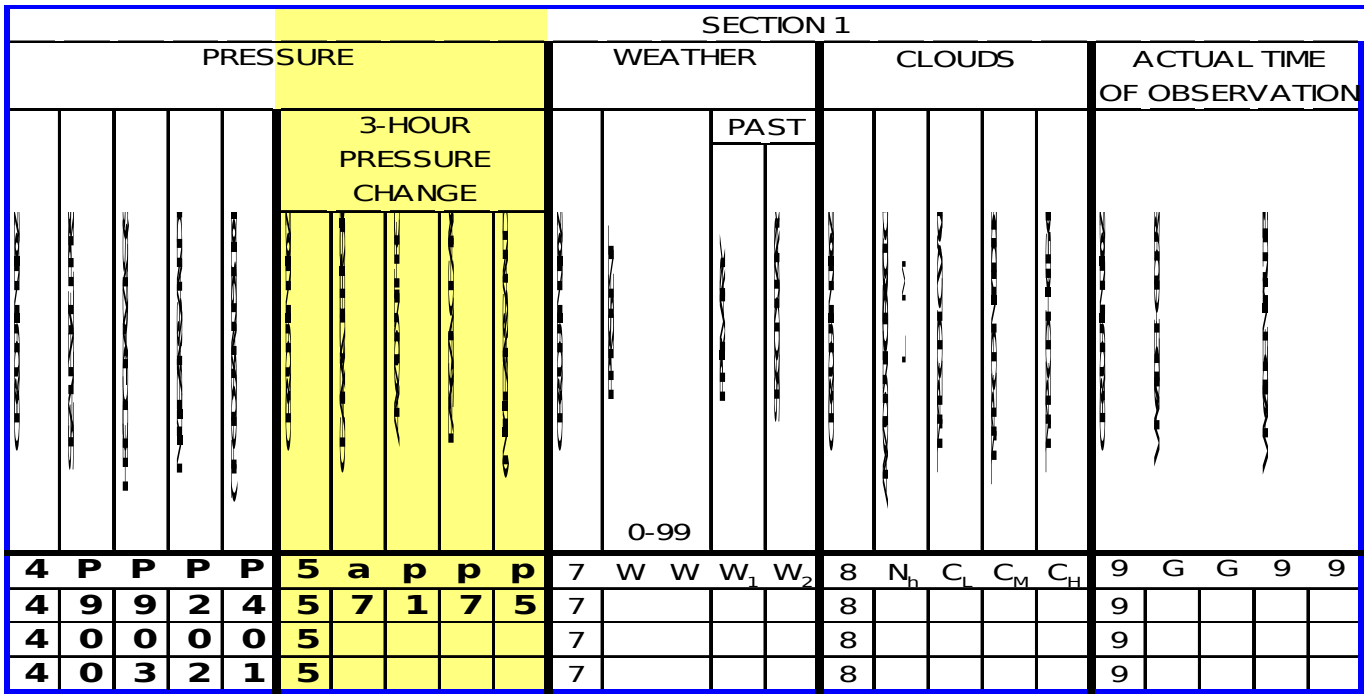
- NOT ENTERED WHEN THE SHIP IS UNDERWAY.
- ENTERED WHEN THE SHIP IS ANCHORED.

- TENDENCIES ARE CALCULATED USING THE CHANGE AND CHARACTERISTIC RECORDED ON THE FORM DURING THE PAST 3 HOURS. (NOT INCLUDING THIS SYNOPTIC TIME).

- USING THE TENDENCY CHART PROVIDED, OBSERVE THE 3 HOUR TENDENCY IN PART 1 OF THE OBSERVATION FORM.

EXAMPLE : (*USE SEA LEVEL PRESSURE COL 22a*)

1159Z PRESSURE: 1025.5
1256Z PRESSURE: 1015.5 DOWN
1358Z PRESSURE: 1005.0 DOWN
NET CHANGE: 20.5



SHIP SYNOPTIC CODE PRESENT WEATHER (7wwW1W2)

THE 99 TYPES OF PRESENT WEATHER

REFER TO THE PRESENT WEATHER TABLE

"WW" - PRESENT WEATHER AT OBSERVATION TIME INDICATED IN COL 9 OF PART 1: (USE THE FIRST VALUE)

EXAMPLE: SHRA FG TABLE CODE: 81

"W1W2" - PAST WEATHER

EVEN SYNOPTIC - PAST 6 HOURS, ODD - PAST 3 HOURS.

W1: HIGHEST PRIORITY (USE TABLE BELOW RIGHT)

W2: SECOND HIGHEST PRIORITY (USE SAME TABLE)

- ENTER 70000 FOR NO SIGNIFICANT PRESENT/PAST WEATHER

WEATHER				CLOUDS					
		PAST							
	0-99								
7	W W	W_1	W_2	8	N_h	C_L	C_M	C_H
7	8 1	1	0	8				
7	/ /		/	8				
7	8 / 1	1	0	8				

PAST WEATHER

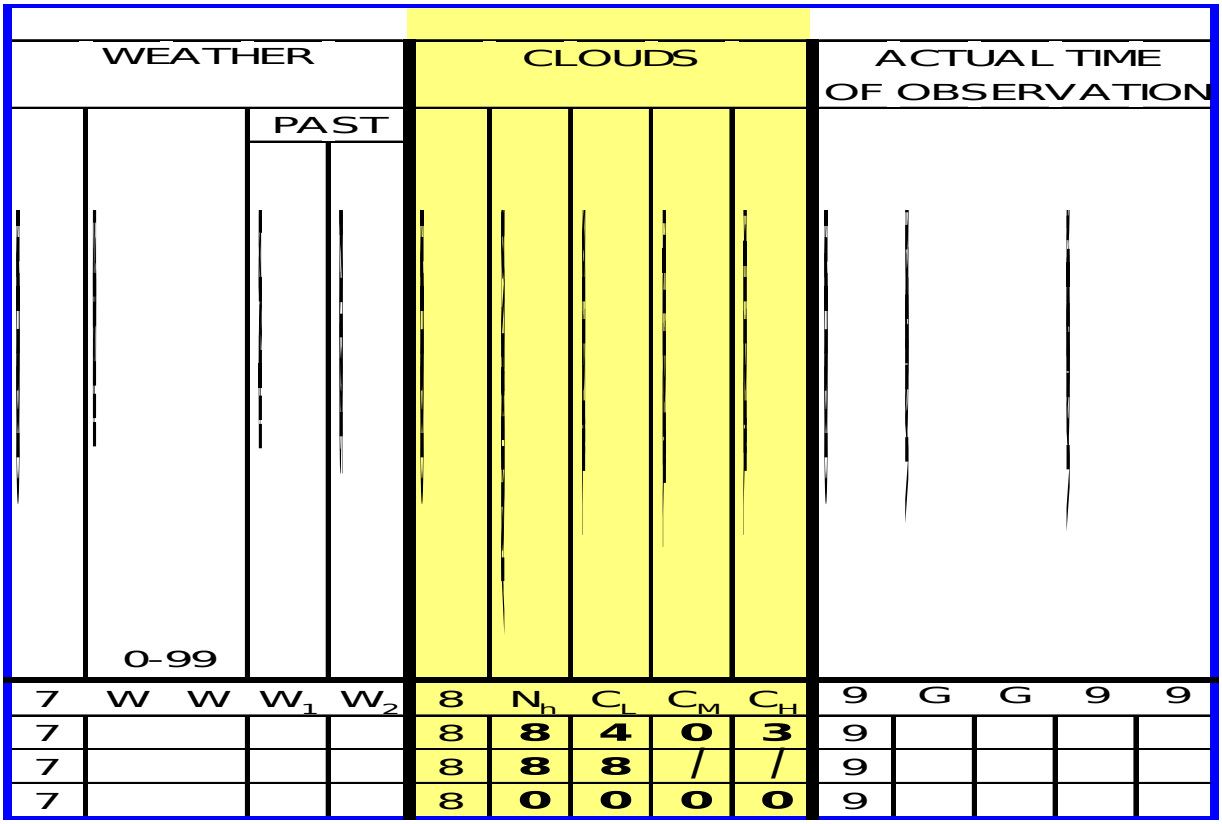
Codes for Past Weather, W_1W_2	
Code	
9	Thunderstorm(s) with or without precipitation
8	Shower(s)
7	Snow, or rain and snow mixed
6	Rain
5	Drizzle
4	Fog, ice fog, or thick haze (visibility was less than 1/2 nautical mile)
3	Sandstorm, dust storm, or blowing snow
2	Cloud cover more than 1/2 throughout period
1	Cloud cover more than 1/2 for part of period, and 1/2 or less for another part period
0	Cloud cover 1/2 or less throughout period

SHIP SYNOPTIC CODE THE CLOUD GROUP (8NhClCmCh)

- "Nh": AMOUNT OF LOW OR MID CLOUD PRESENT
  ENCODE AMOUNT IN EIGHTS (1 = 1/8 AMOUNT)
  ENCODE 9 WHEN SKY IS OBSCURED (EX: FOG)
- "CL": LOW CLOUD TYPE PRESENT
  ENCODE 1-9 BASED ON PRIORITY (USE TABLES)
- "Cm": MID CLOUD PRESENT (ENCODE SAME AS Cl)
- "Ch": HIGH CLOUD PRESENT (SAME).

EXAMPLES FROM COL 10:

FEW010 SCT043 BKN180 *CODED: 84803*
BKN008 OVC025: *CODED 888//*
CLEAR SKIES ENTER 80000



SHIP SYNOPTIC CODE (9GGgg)

- IDENTIFIES THAT THE ACTUAL TIME OF OBSERVATION WAS NOT WITHIN THE DESIGNATED 10 MINUTE (45 - 55 MINUTES PAST THE HOUR) TIME FRAME.
  - DUE TO SHIPBOARD OPERATIONS/EXERCISES.
  - NOT USUALLY INCLUDED
- "GG": HOUR IN UTC (TENS AND UNIT).
- "gg": MINUTES (TENS AND UNITS).

WEATHER				CLOUDS					ACTUAL TIME OF OBSERVATION				
		PAST											
	0-99												
7	W W	W_1	W_2	8	N_h	C_L	C_M	C_H	9	G	G	9	9
7				8					9	1	6	0	5
7				8					9	1	6	4	0
7				8					9	1	7	3	0

SHIP SYNOPTIC CODE (SECT 2) SHIPS COURSE & SPEED (222DsVs)

- "Ds ": COURSE MADE GOOD DURING THE 3 HOURS PRECEDING THE OBSERVATION

  - USE 8 POINTS OF THE COMPASS (EX: 1=NE, 4=S, 8=N)
  - ENTER "9" IF DIRECTION UNKNOWN
  - ENTER "/" IF ANCHORED

- "Vs": SHIPS AVERAGE SPEED MADE GOOD DURING THE 3 HOURS PROCEEDING THE TIME OF OBSERVATION (USE TABLE BELOW RIGHT).

SECTION 2								
SHIP'S COURSE AND SPEED			SEA SURFACE TEMPERATURE					
GROUP AND S INDICATOR	COURSE MADE G	AVG SPD MADE G	GROUP INDIC	SIGN TYPE OF T	DEGREES AND °C			
222	D_s	V_s	0	S_s	T_w	T_w	T_w
222	**8**	**2**	0				
222	**3**	**3**	0				
222	**5**	**4**	0				

Code for Ship's Average Speed, V_s	
Code Figures	True Speed
0	0 knot
1	1 to 5 knots
2	6 to 10 knots
3	11 to 15 knots
4	16 to 20 knots
5	21 to 25 knots
6	26 to 30 knots
7	31 to 35 knots
8	36 to 40 knots
9	Over 40 knots
/	Not reported

SHIP SYNOPTIC CODE SEA SURFACE TEMPERATURE (0SsTwTwTw)

- "Ss": SIGN OF THE SEA TEMP
  - ENTER "0" FOR POSITIVE
  - ENTER "1" FOR NEGATIVE

- "TwTwTw": SEA SURFACE TEMPERATURE IN CELSIUS. (NEAREST 1/10)
  - OMIT GROUP IF SEA TEMP CANNOT BE OBSERVED.

SEA TEMP: 12.4 C
1.1 C
15.0 C

SECTION 2						
SHIP'S COURSE AND SPEED			SEA SURFACE TEMPERATURE			
GROUP AND SECTION INDICATOR	COURSE MADE GOOD - 3 HOURS	AVG SPEED MADE GOOD - 3 HOURS	GROUP INDICATOR	SIGN TYPE OF TEMP. (0-1)	DEGREES AND TENTHS °C	
222	D_s	V_s	0	S_s	T_w	T_w T_w
222	8	2	0	0	1	2 4
222	3	3	0	1	0	1 1
222	5	4	0	0	1	5

SHIP SYNOPTIC CODE SEA WAVES (2PwPwHwHw)

- "PwPw": PERIOD OF SEA WAVES
  ENTER THE SAME AS IN COL E ABOVE

- "HwHw": HEIGHT OF SEA WAVES (IN 1/2 METERS)
  MATCH THE HEIGHT ENTERED IN COL F TO THE TABLE AND ENTER VALUE FROM TABLE.

- COL E ENTRY: (0304)
- "HwHw" ENTRY: (20302)

					SECTION 2															
					WAVES															
SEA WAVES					SWELLS															
					DIRECTION FROM					PREDOMINATE SWELL					SECONDARY SWELL					
GROUP INDICATOR	PERIOD (SEC)		HEIGHT (Half Meters)		INDICATOR	PREDOMINATE SWELL °T 01-36		SECONDARY SWELL °T 01-36		INDICATOR	PERIOD (SEC)		HEIGHT (Half Meters)		INDICATOR	PERIOD (SEC)		HEIGHT (Half Meters)	
2	P_W	P_W	H_W	H_W	3	d_{w1}	d_{w1}	d_{w2}	d_{w2}	4	P_{W1}	P_{W1}	H_{W1}	H_{W1}	5	P_{W2}	P_{W2}	H_{W2}	H_{W2}
2	**0**	**3**	**0**	**2**	3					4					5				
2					3					4					5				
2					3					4					5				

SHIP SYNOPTIC CODE DIRECTION OF SWELLS (3Dw1Dw1Dw2Dw2)

DIRECTION OF PRIMARY & SECONDARY SWELL WAVES

- "Dw1Dw1": DIRECTION OF PRIMARY SWELL WAVES.
  - ENTER IN HUNDREDS AND TENS THE DIRECTION FROM WHICH THE SWELLS ARE COMING.
  - WHEN NONE ARE VISIBLE ENTER "//"
  - IF NO SWELL IS OBSERVED ENTER: 30000.

- "Dw2Dw2: DIRECTION OF SECONDARY SWELL WAVES.
  - ENTER THE SAME AS PRIMARY SWELL.

EXAMPLE: PRIMARY SWELL FROM 330 DEGREES
SECONDARY SWELL FROM 090 DEGREES
ENTER: 33309

SECTION 2																				
WAVES																				
SEA WAVES					SWELLS															
					DIRECTION FROM					PREDOMINANT SWELL					SECONDARY SWELL					
GROUP INDICATOR	PERIOD (SEC)		HEIGHT (Half Me		INDICATOR	PREDOMINANT SWELL °T 01-36		SECONDARY SWELL °T 01-36		INDICATOR	PERIOD (SEC)		HEIGHT (Half Meters)		INDICATOR	PERIOD (SEC)		HEIGHT (Half Meters)		
2	P_W	P_W	H_W	H_W	3	d_{w1}	d_{w1}	d_{w2}	d_{w2}	4	P_{W1}	P_{W1}	H_{W1}	H_{W1}	5	P_{W2}	P_{W2}	H_{W2}	H_{W2}	
2					3	**3**	**3**	**0**	**9**	4					5					
2					3	**2**	**7**	**0**	**0**	4					5					
2					3	**0**	**0**	**0**	**0**	4					5					

SHIP SYNOPTIC CODE PERIOD/HEIGHT OF PRIMARY SWELL (4Pw1Pw1Hw1Hw1)

– “Pw1Pw1”: PERIOD OF PRIMARY SWELL

- ENTER PERIOD AS ENTERED IN COL F OF PART A

– Hw1Hw1”: HEIGHT OF PRIMARY SWELL IN 1/2 METERS.

- HEIGHT OF SWELL ENTERED IN COL F OF PART A CONVERTED TO HALF METERS USING CODE TABLE III-4-4

CODE TABLES

TABLE III-4-4

Wave Height in Half-Meters

Code figure	Height in feet	Code figure	Height in feet
00	calm	16	25 or 26
01	1 or 2	17	27 or 28
02	3 or 4	18	29
03	5	19	30 or 31
04	6 or 7	20	32
05	8	21	33 or 34
06	9 or 10	22	35 or 36
07	11 or 12	23	37
08	13	24	38 or 39
09	14 or 15	25	40
10	16	26	41 or 42
11	17 or 18	27	43 or 44
12	19 or 20	28	45
13	21	29	46 or 47
14	22 or 23	30	48
15	24	31	49 or 50

SHIP SYNOPTIC CODE PERIOD/HEIGHT OF PRIMARY SWELL ($4P_{w1}P_{w1}H_{w1}H_{w1}$)

- **EXAMPLE:** **(COL F OF PART A)**

  SWELL FROM 360 DEG, PERIOD 6 SECS, HEIGHT OF 6 FT

  CODED ENTRY: 33600 40604

  NOTE: 1. "00" IN 3 GROUP INDICATES NO SECONDARY SWELL.

  2. 6 FT WAVES CONVERTS TO CODE FIGURE 4.

- **ENTER: 40000 50000 IF NO SWELLS ARE PRESENT**

SECTION 2																				
WAVES																				
SEA WAVES					SWELLS															
					DIRECTION FROM					PREDOMINANT SWELL					SECONDARY SWELL				
GROUP INDICATOR	PERIOD (SEC)		HEIGHT (Half Meters)		INDICATOR	PREDOMINANT SWELL °T 01-36		SECONDARY SWELL °T 01-36		INDICATOR	PERIOD (SEC)		HEIGHT (Half Meters)		INDICATOR	PERIOD (SEC)		HEIGHT (Half Meters)	
2	P_W	P_W	H_W	H_W	3	d_{w1}	d_{w1}	d_{w2}	d_{w2}	4	P_{W1}	P_{W1}	H_{W1}	H_{W1}	5	P_{W2}	P_{W2}	H_{W2}	H_{W2}
2	**0**	**3**	**0**	**2**	**3**	**3**	**6**	**0**	**0**	**4**	**0**	**6**	**0**	**4**	**5**	**0**	**0**	**0**	**0**
2					**3**	**3**	**3**	**0**	**6**	**4**	**0**	**3**	**0**	**2**	**5**	**0**	**5**	**0**	**3**
2	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**

SHIP SYNOPTIC CODE PERIOD/HEIGHT OF SECONDARY SWELL (5Pw2Pw2Hw2Hw2)

- ENTER SECONDARY SWELL PERIOD AND HEIGHT *IDENTICAL* TO PRIMARY PERIOD AND HEIGHT (4Pw1Pw1Hw1Hw1).

- ENTER 0000 IF NO SECONDARY SWELL IS OBSERVED.

SECTION 2																				
WAVES																				
SEA WAVES					SWELLS															
					DIRECTION FROM					PREDOMINANT SWELL					SECONDARY SWELL					
GROUP INDICATOR	PERIOD (SEC)		HEIGHT (Half Meters)		INDICATOR	PREDOMINANT SWELL ^{o}T 01-36		SECONDARY SWELL ^{o}T 01-36		INDICATOR	PERIOD (SEC)		HEIGHT (Half Meters)		INDICATOR	PERIOD (SEC)		HEIGHT (Half Meters)	
2	P_W	P_W	H_W	H_W	3	d_{w1}	d_{w1}	d_{w2}	d_{w2}	4	P_{W1}	P_{W1}	H_{W1}	H_{W1}	5	P_{W2}	P_{W2}	H_{W2}	H_{W2}
2	0	3	0	2	3	3	6	0	0	4	0	6	0	4	5	0	0	0	0
2	0	0	0	0	3	3	3	0	6	4	0	3	0	2	5	0	5	0	3
2	0	1	0	1	3	0	0	0	0	4	0	0	0	0	5	0	0	0	0

SHIP SYNOPTIC CODE WET BULB (8SwTbTbTb)

- ICE ACCRETION BLOCKS HAVE BEEN OMITTED FROM THIS COURSE. REFER TO 3144.1D SHOULD ICING CONDITIONS DEVELOP.
- OMIT THE ENTIRE GROUP FROM REPORT IF ICE IS NOT OBSERVED

- WET BULB TEMPERATURE:
- "Sw": ENTER "0" FOR ZERO OR POSITIVE READING.

- "TbTbTb": ENTER THE WET BULB TEMPERATURE IN TENS, UNITS AND TENTHS OF A DEGREE CELSIUS.

SUMMARY

- **SUMMARY**
- **POINTS OF CONTACT**
- **REFERENCES**

FLEET LIAISON

NAVPACMETOCCEN SAN DIEGO

DEPARTMENT HEAD:

LCDR CAVALIERI

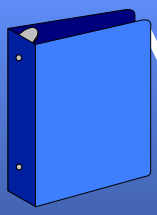
PHONE: COMM (619) 545 2217 DSN 735-2217

TRAINING DIVISION:

AGC (SW) ADAMS

PHONE: COMM (619) 545 4951 DSN 735-4951

MOBILE ENVIRONMENTAL TEAM DIVISION:



METOC PUBLICATIONS

-OPNAV 3140.24E (Warning's & Conditions of Readiness Re. Hazardous & Destructive Weather Phenomena)

-USCINCPACINST 3140.4 (METOC Support Manual)

-CINCPACFLT OPORD 201 ANNEX H

-C3F / C7F OPORD 201 BOOK II ANNEX H

-CNSP 3140.3B CNAP 3140.1B (METOC Support Doctrine)

-CNSP / CNSL 3840.1B (Joint Surf Manual)

-NAVMETOCCOMINST 3140.1K (METOC Support Manual)

-NAVMETOCCOMINST 3144.1D (Manual for Ship's Surface Weather Observations)

-C3F 262244Z Aug 93 (Hazardous Weather Avoidance & Reporting)

-C3F 251823Z May 95 (Hazardous Weather Avoidance & Reporting)